

### **REMARKS**

Claims 1-41 are pending, and all claims are rejected, including the independent claims 1, 15, 23, and 36. These independent claims are all rejected as anticipated under 35 U.S.C. § 102(b) as anticipated by *Dymetman* (U.S. Patent No. 6,330,976). Additionally, various dependent claims are rejected as obvious under 35 U.S.C. § 103(a) as obvious from *Dymetman* in view of an article by *Clark et al.*

Regarding the independent claims, claim 1 is for a method, claim 15 is for a system, claim 23 is for a mobile device, and claim 36 is for software. All of these four independent claims cover a similar inventive concept, and thus it will suffice to focus here on claim 1.

### **Summary of the Present Invention**

The present invention is a mobile device, system, method and software for communicating with the internet utilizing a written universal resource locator (URL). The basic idea of the invention is to use a digital camera module to take a digital photograph of an object having a written URL, using pattern recognition to extract the URL from the photograph based on known URL patterns (or glyphs) as “http”, “www”, “com” and using the recognized URL to command the mobile device to open the corresponding URL in the relevant browsing application.

Independent claim 1 is a method claim, comprising the steps of: using a camera unit to acquire a raw visual light image that contains the written URL, converting the raw visual light image to an electronic image, locating glyphs of at least one particular standardized set of URL characters in the electronic image, extracting an extractable URL from the electronic image, sending the extractable URL in a request signal to a web server in order to access an internet site, and presenting the internet site.

Independent claim 16 is a system claim, comprising: a digital camera for photographing objects with written URLs, URL extraction means for finding glyphs from the digital photograph, an internet interface, and display for presenting the internet site.

Independent claim 23 is a mobile device claim, comprising means for commanding to start photographing, a camera, a display, and an internet device, wherein the mobile device is for processing the image signal from the camera in order to obtain the web site signal from the internet interface.

Independent claim 36 is a claim for computer-readable medium, comprising a URL locator software module for locating URLs in an electronic image, a scan and text recognition software module for extracting URLs from the electronic image, and a browser-based user interface module for allowing the user to decide whether to use the extracted URL for retrieving and presenting web pages.

Typically, a need for extracting URLs may arise in cases where a mobile device user can use the camera module to photograph text from, for example, magazine stories, advertisements, or other written information referring to related internet-addresses. This capability would make it easier to show the content to the user, compared to a situation where the user needs to type the URL in the device manually, especially if the URL is long or complex.

### **Summary of the Primary Reference**

The Office Action refers to *Dymetman*, where an article of manufacture, a method, and system for obtaining automatic actions in a network of detection processing and action devices are presented. *Dymetman* relies upon specially encoded markings embedded into a document hard copy (col. 8, lines 55-63), in order to enable the detection of special symbols that indicate the linkage between tangible and electronic media (for example, finding hyperlinks of Xerox DataGlyph format in printed media).

A typical scenario of using *Dymetman* (see Fig. 9) is to have this kind of marking scheme utilized both in document hard copy (col. 16, lines 31-46) and in a corresponding “digital page” (col. 16, lines 47-50), where the indication of the “section of interest” (Fig. 11) from the hardcopy to the electronic system is arranged by means of a camera-equipped detector (Fig. 8).

In summary, *Dymetman* presents various embodiments for building an isomorphism between tangible and intangible media formats, when such is needed.

**Claim 1 is Not Anticipated by *Dymetman***

The preamble of present claim 1 discloses a method for using a “written” URL to communicate with the internet. A camera views a scene that contains the written URL, then converts the visual image to electronic form, locates a set of URL glyphs (e.g. “com” or “www”) in the electronic image, and extracts the rest of the URL. The extracted URL is used to access a web site.

In contrast, the *Dymetman* reference teaches away from viewing a “written” URL. At column 5, lines 20-23, *Dymetman* explains that his invention is different from “conventional techniques that rely on URLs” as action identifiers. *Dymetman* does discuss using URLs at column 26, lines 21-39 cited by the Office Action, but that discussion in *Dymetman* involves a user who “copies the URL” rather than a camera that acquires the URL from a visual image (as in present claim 1).

The difference between the present invention and *Dymetman* also goes much farther. Step 3 of present claim 1 requires locating glyphs of URL characters. However, the Office Action points to FIGs. 5A and 5B of *Dymetman*, which merely show page-identifiers (302, 402) and location codes (304, 404) as described at column 13, instead of showing a “standardized set of URL characters” (e.g. “www” or “org” or “http”) as presently claimed in step 3 of claim 1.

*Dymetman*’s description of those figures 5A and 5B (at column 5, lines 62-63) makes clear that the markings in FIGs. 5A and 5B are “encoded” which again is entirely different from the present claimed “standardized set of URL characters.” Incidentally, the Office Action does not say whether it is referring to the page-identifiers (302,402) or instead the localization codes (304,404), but in either case there is no resemblance to the present claimed invention.

Although the Office Action refers to both FIGs. 5A and 5B as showing the present claimed “glyphs,” column 13, lines 33-34 of *Dymetman* indicates that only FIG. 5B contains “DataGlyph” markings. Even with regard to FIG. 5B, it is unclear whether the Office Action is referring to the page-identifiers (402) or the location codes (404). But in either case, these glyphs of *Dymetman*’s FIG. 5B encode bits, instead of being glyphs of a “standardized set of URL characters” as claimed in step 3 of present claim 1. *Dymetman*’s location codes (404) merely indicate localization on a page or sticker (see column 9, lines 19-20), and thus bear no resemblance to URL characters (also see column 8, lines 65-67). The page-identifiers or “pid” (402) in FIG. 5B are DataGlyph markings that identify an action produced through the network and also identify the page from which it is decoded (see column 9, lines 26-28). A person skilled in the art understands that written URL characters do not identify the page on which they are written, and this fact demonstrates yet again that *Dymetman*’s “pid” (402) are not comparable to the present claimed glyphs.

The “DataGlyphs” to which *Dymetman* refers embed computer-readable data on surfaces such as paper, labels, plastic, glass, or metal. Basic DataGlyphs are a pattern of forward and backward slashes representing ones and zeroes. This pattern forms an evenly textured field. Unlike most barcodes, DataGlyphs are flexible in shape and size. Their structure and robust error correction also make them suitable for curved surfaces and other situations where barcodes fail. This is the kind of thing that *Dymetman* is referring to, in order to identify an item on which the DataGlyphs are embedded. The present claimed invention deals with a written URL that consequently says nothing about the item on which the URL is written.

**Further Important Differences Between Present Claim 1 and *Dymetman***

The Office Action makes reference to a number of different parts of *Dymetman*. We shall now consider each step of present claim 1, compared to the referenced parts *Dymetman*.

Regarding claim 1, step 1, the Office Action states the *Dymetman* teaches “using a camera unit to acquire a raw visual light image that contains the written URL.” References are made to Fig. 8; col. 8, lines 45-50; col. 9, lines 10-15; and col. 5, lines 10-29, where using a camera to acquire an image of the document is described. However, the Office Action’s citations from *Dymetman* make it clear that the URLs are not recognized based on format but rather by location on the page (col. 5, lines 10-29). This may seem a subtle difference, but actually it is important for our invention.

Regarding claim 1, step 2, the Office Action states that *Dymetman* teaches “converting the raw visual image to an electronic image.” Reference is made to *Dymetman* (col. 15, lines 23-24), that says “The image-reading device receives light and produces image data.” Applicant does not now object to this part of the Office Action.

Claim 1, step 3 was already discussed above. However, there are further significant differences between this step of the present claimed invention and *Dymetman*. The Office Action states that *Dymetman* teaches “locating glyphs of at least one particular standardized set of URL characters in the electronic image.” References are made to Fig. 5A; Fig. 5B; col. 8, lines 55-62; and col.13, lines 37-44, which describe “coordinate system” techniques for embedding location information into the background. However, locating glyphs in our invention is different from *Dymetman*. In fact, the system as presented in *Dymetman* does not make any effort in locating URLs specifically—it is up to the user to point toward the URL of interest using the pointer device. On the other hand, for the present invention, finding the position of URLs is more important, because in our case we do not have any other knowledge of the document in question and we try to automatically locate the glyphs based on the appearance, not location. Unless the corresponding digital page of *Dymetman* supports the URL functionality, the *Dymetman* system does not make any difference between arbitrary text

and URLs. Actually, the flow of events implied by *Dymetman* is quite the opposite of our invention — *Dymetman* suggests that there is primarily an electronic image of the document and optionally a printed version of the same document, and their invention is all about building correspondence between those two documents through a coordinate system presented in Fig. 5(A, B).

Regarding claim 1, step 4, the Office Action states that *Dymetman* teaches “extracting an extractable URL from the electronic image.” References are made to *Dymetman* (col. 16, lines 31-33) which describes the actions of extracting page ID and coordinate information from user-pointed location on the hardcopy. *Dymetman* clearly does not teach this aspect of the present invention. First, *Dymetman*’s page ID and location information is not an “extractable URL,” but merely coordinates that connect the visible document to the corresponding electronic version. Second, according to *Dymetman*, this is something that the user specifically points and clicks with significantly good pointing resolution compared to our invention, where a bigger coverage of the surface is covered by the image, and finding the URLs in the image is a key factor of the invention.

Regarding claim 1, step 5, the Office Action states that *Dymetman* teaches “sending the extractable URL in a request signal to a web server in order to access an Internet side.” References are made to *Dymetman* (col. 16, lines 33-36), where pointing the device sends the page ID and location information to the local computer over a network for reference. Thus, *Dymetman* does not teach this step either. Our invention comprises sending the URL to a corresponding server in the Internet to access a site. This is different from *Dymetman*’s location coordinates of a digital page residing in the local server memory. When we send a URL request, we do not yet know what the information to come is, not to mention how it appears visually.

Regarding claim 1, step 6, the Office Action states that *Dymetman* teaches processing a reply from the web server, and presenting the Internet site. References are made to *Dymetman* (col. 9, line 64 thru col. 10, line 2; col. 18, lines 51-54; col. 9, lines 2-8; and col. 18, lines 54-55), where this kind of step is indeed taken. However, it is assumed that there is a known

coordinate isomorphism between the tangible document and the digital document, which is not the case in our invention, in which the only binding element between the tangible document and the web page is the URL string, and no coordinate isomorphism exists. Thus, our invention is far more useful and generic, because linked web pages need not know anything about the coordinates or the URL location on the surface. This is not the case with the *Dymetman* invention.

Regarding independent claims 15, 23 and 36 (system, mobile device, and software, respectively), the Office Action refers to the same sections in *Dymetman*. Therefore, all of the explanations provided above are applicable to those claims also.

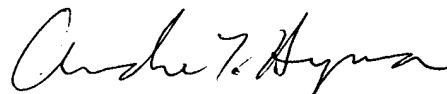
### CONCLUSION

It is earnestly requested that the application be reconsidered, and that the four independent claims (which are similar to each other) be allowed, as well as the claims depending therefrom. The *Dymetman* reference teaches away from imaging written URLs. Moreover, the DataGlyph page identifiers in *Dymetman*'s FIG. 5B identify the page or object on which they are written, which proves again that those page identifiers are not written URLs as presently claimed. Further, *Dymetman*'s page id and location information do not form an "extractable URL" as in step 4 of present claims 1. Other important differences have also been described above.

Applicant respectfully requests that the Examiner please contact Applicant's attorney by telephone, if doing so might facilitate or expedite examination of the present application.

It is submitted that early passage of the present claims to issuance would be appropriate according to the relevant statutes and regulations, in view of the novel and useful invention claimed by the present application.

Respectfully submitted,



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